

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An antenna device for transmitting and/or receiving RF radiation, installable in and connectable to a radio communication device, and comprising:

b an antenna structure switchable between a plurality of predefined antenna configuration states, each of which is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern, and

 a switching device for selectively switching said antenna structure between said plurality of predefined antenna configuration states, wherein

 each of said plurality of predefined antenna configuration states being ~~adapted~~ optimized for use of the antenna device in said radio communication device in a respective predefined physical operation environment and being associated therewith.

2. (Previously Presented) The antenna device as claimed in claim 1, wherein each predefined physical operation environment is defined by objects affecting electromagnetic radiation and

located within a distance from said communication device of less than ten wavelengths of the electromagnetic radiation.

3. (Original) The antenna device as claimed in claim 1, wherein said radio communication device is a wireless hand-portable radio communication device.

B 4. (Currently Amended) The antenna device as claimed in claim 1, wherein one of said plurality of predefined antenna configuration states is ~~adapted~~ optimized for use of the antenna device in said radio communication device in a talk position.

5. (Currently Amended) The antenna device as claimed in claim 1, wherein one of said plurality of predefined antenna configuration states is ~~adapted~~ optimized for use of the antenna device in said radio communication device in a free space environment.

6. (Currently Amended) The antenna device as claimed in claim 1, wherein one of said plurality of predefined antenna configuration states is ~~adapted~~ optimized for use of the antenna device in said radio communication device in a waist position.

7. (Currently Amended) The antenna device as claimed in claim 1, wherein one of said plurality of predefined antenna configuration states is ~~adapted~~ optimized for use of the

antenna device in said radio communication device in a pocket position.

8. (Currently Amended) The antenna device as claimed in claim 1, wherein a control device is arranged to receive an indicator which indicates a change from a first to a second of said predefined physical operation environments and which controls said switching device to switch said antenna structure from a first to a second of said plurality of predefined antenna configuration states, in accordance with said indicator.

9. (Original) The antenna device as claimed in claim 8, wherein said indicator represents a reflection coefficient of said radio communication device.

10. (Original) The antenna device as claimed in claim 8, wherein said indicator represents an operation state of said radio communication device.

11. (Currently Amended) The antenna device as claimed in claim 1, wherein a control device receives a measure of a detected physical property of an operation environment, said operation environment being external to said antenna device and to the communication device having the antenna device installed therein, and controls said switching device, and hence the selective switching of said antenna structure between said plurality of predefined antenna configuration states, in accordance with said measure.

12. (Currently Amended) The antenna device as claimed in claim 11, wherein the measure of the detected physical property of the operation environment is received from a sensor used solely by said control device to affect said switching device.

B 13. (Original) The antenna device as claimed in claim 12, wherein the measure of the detected physical property of the operation environment is received from a resistive, capacitive, inductive, optic, temperature, pressure, inclination, orientation, or motion sensor.

14. (Currently Amended) The antenna device as claimed in claim 11, wherein the control device receives a second measure of a second detected physical property of the operation environment, and controls said switching device, and hence the selective switching of said antenna structure between said plurality of predefined antenna configuration states, in accordance with said second measure.

15. (Original) The antenna device as claimed in claim 14, wherein the detected physical properties are derived from different spatial portions of the operation environment.

16. (Original) The antenna device as claimed in claim 15, wherein the detected physical properties are of different nature.

17. (Currently Amended) The antenna device as claimed in claim 1, wherein the plurality of predefined antenna configuration states comprise different numbers of connected antenna elements.

18. (Currently Amended) The antenna device as claimed in claim 1, wherein the plurality of predefined antenna configuration states comprise differently arranged RF feed connections.

B 19. (Currently Amended) The antenna device as claimed in claim 1, wherein the plurality of predefined antenna configuration states comprise differently arranged RF ground connections.

20. (Original) The antenna device as claimed in claim 1, wherein said switching device comprises a microelectromechanical system (MEMS) switch device.

21. (Original) The antenna device as claimed in claim 1, wherein said antenna structure includes a switchable antenna element having any of meander, loop, slot, patch, whip, helical, spiral and fractal configurations.

22. (Currently Amended) The antenna device as claimed in claim 1, wherein said antenna structure comprises a transmitting antenna structure and a receiving antenna structure, and said plurality of predefined antenna

configuration states comprise a plurality of predefined antenna configuration states for the transmitting antenna structure and a plurality of predefined antenna configuration states for the receiving antenna structure, each antenna structure being switchable independently of each other between its respective plurality of predefined antenna configuration states.

23. (Original) A radio communication device comprising an antenna device according to claim 1.

B 24. (Currently Amended) A method for transmitting and/or receiving RF radiation in an antenna device including a switchable antenna structure installable in and connectable to a communication device, the method comprising:

optimising ~~adapting~~ each of a plurality of predefined antenna configuration states, each predefined antenna configuration state being distinguished by a set of radiation parameters, in the switchable antenna structure for use of the antenna device in the communication device in a respective predefined physical operation environment and being associated therewith; and

selectively switching the switchable antenna structure between said plurality of predefined antenna configuration states.

25. (Previously Presented) The method as claimed in claim 24, wherein each said predefined physical operation environments are defined by objects affecting the RF radiation and located

within a distance from said radio communication device of less than ten wavelengths of said RF waves.

b 26. (Currently Amended) The method as claimed in claim 24, wherein said selective switching is performed from one to another of said plurality of predefined antenna configuration states, said one and another predefined antenna configuration states being adapted for use of the antenna device in said communication device in any two of the following said predefined physical operation environments: a talk position, a free space environment, a waist position, and a pocket position.

27. (Currently Amended) The method as claimed in claim 24, further comprising controlling said selectively switching with a received measure indicating a change from a first to a second of said predefined physical operation environments and said switching device to switch said antenna structure from a first to a second of said plurality of predefined antenna configuration states, in accordance with said measure.

28. (Currently Amended) The method as claimed in claim 24, further comprising controlling said selectively switching with a measure of a detected physical property of an operation environment, the environment being external to said antenna device and to said radio communication device having the antenna device installed therein, to switch said antenna

structure between said plurality of predefined antenna configuration states, in accordance with the measure.

29. (Currently Amended) An antenna device for transmitting and receiving radio frequency waves, installable in a radio communication device, and comprising:

an antenna structure switchable between a plurality of predefined antenna configuration states, each predefined antenna configuration state being distinguished by a set of radiation parameters;

a switching device which selectively switches said antenna structure between said plurality of predefined antenna configuration states; and

a control device which receives a detected physical property of an operation environment, said operation environment being external to the antenna device and to the radio communication device having the antenna device installed therein, and which controls said switching device, and the selective switching of said antenna structure between said plurality of predefined antenna configuration states, in accordance with said detected physical property,

wherein a measure of the detected physical property of the operation environment is received from at least one of a sensor, particularly a resistive, capacitive, inductive, optic, temperature, pressure, inclination, orientation, or motion sensor, and wherein said operation environment is one of a plurality of predefined operation environments and each of said predefined operation environments is associated with a

respective one of said plurality of predefined antenna configuration states.

30. (Cancelled).

31. (Currently Amended) An antenna device for transmitting and receiving radio frequency waves, installable in a radio communication device, and comprising:

B an antenna structure switchable between a plurality of predefined antenna configuration states, each predefined antenna configuration state being distinguished by a set of radiation parameters;

a switching device which selectively switches said antenna structure between said plurality of predefined antenna configuration states; and

a control device which receives a detected physical property of an operation environment, said operation environment being external to the antenna device and to the radio communication device having the antenna device installed therein, and which controls said switching device, and the selective switching of said antenna structure between said plurality of predefined antenna configuration states, in accordance with said detected physical property,

wherein the control device receives a measure of a second detected physical property of the operation environment, and controls said switching device, and hence the selective switching of said antenna structure between said plurality of predefined antenna configuration states, in dependence on said

second measure and wherein said operation environment is one of a plurality of predefined operation environments and each of said predefined operation environments is associated with a respective one of said plurality of predefined antenna configuration states.

32. (Original) The antenna device as claimed in claim 31, wherein the detected physical properties are derived from different spatial portions of the operation environment.

B 33. (Currently Amended) In an antenna device installable in a communication device, and comprising

an antenna structure switchable between a plurality of predefined antenna configuration states, each of which is distinguished by a set of radiation parameters;

a switching device which selectively switches said antenna structure between said plurality of predefined antenna configuration states,

a method for transmitting and receiving radio frequency waves comprising:

receiving a detected physical property of an operation environment, the operation environment being external to the antenna device and to the communication device having the antenna device installed therein; and

controlling said switching device, and the selective switching of the antenna structure between the plurality of predefined antenna configuration states, in dependence on the detected physical property,

wherein a measure of the detected physical property of the operation environment is received from a sensor, the sensor being one of a resistive, capacitive, inductive, optic, temperature, pressure, inclination, orientation or motion sensor and wherein said operation environment is one of a plurality of predefined operation environments and each of said predefined operation environments is associated with a respective one of said plurality of predefined antenna configuration states.

b
34. (Cancelled).

35. (Original) The antenna device as claimed in claim 1, wherein said set of radiation parameters includes at least one resonance frequency, impedance, radiation pattern, polarization and bandwidth.

36. (Original) The method as claimed in claim 24, wherein said set of radiation parameters includes at least one of resonance frequency, impedance, radiation pattern, polarization and bandwidth.

37. (Original) The antenna device as claimed in claim 29, wherein said set of radiation parameters includes at least one resonance frequency, impedance, radiation pattern, polarization and bandwidth.

38. (Original) The method as claimed in claim 33, wherein said set of radiation parameters includes at least one of resonance frequency, impedance, radiation pattern, polarization and bandwidth.

39. (Newly Added) The antenna device as claimed in claim 1, wherein said radio communication device comprises a table storing said associations for use in said selective switching.

b
end
40. (Newly Added) An antenna device for transmitting and/or receiving RF radiation, installable in and connectable to a radio communication device, and comprising:

an antenna structure switchable between a plurality of physical antenna configurations and comprising a plurality of antenna elements; and

a switching device for selectively switching said antenna structure between said plurality of physical antenna configurations, wherein

each of said plurality of physical antenna configurations being utilized in said radio communication device in a respective predefined physical operation environment, wherein at least one of said physical antenna configurations comprises at least two of said antenna elements' being connected together by means of said switching device.
